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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/473,450	12/28/1999	SEOK HYUN YUN	5204-10	9993

7590 02/27/2002

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EXAMINER

INZIRILLO, GIOACCHINO

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 02/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/473,450

Applicant(s)

YUN, SEOK HYUN

Examiner

Gioacchino Inzirillo

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**


- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

  
Paul Ip  
Primary Examiner

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 5, 15, 16, 17, 18, 19, 20, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pike et al. US 4,156,144 (herein after known as Pike) in view of Basu et al. US 4,951,294 (herein after known as Basu). In Fig. 5 Pike teaches a laser cavity, defined by mirrors 124 and 126, gain medium 120 which lies therein, and that is optically pumped by source 122. In addition, present in the laser cavity is the crystal 130 connected to the power amplifier and the sine wave generator, which will produce the wavelength sweeping. What Pike fails to teach is a

Art Unit: 2828

modelocking element in the cavity for pulsed output formation. However, Basu teaches such an element in Fig. 1 of his patent. Worthy of note is that the modelocker of Basu is intracavity. It would have been obvious to one of ordinary skill in the art to modify Pike in view of Basu.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pike in view of Basu as applied to claims 1, 5, 15, 16, 17, 18, 19, 20, 21 and 22 above, and further in view of Wysocki et al. US 5,189,676 (herein after known as Wysocki). Pike in view of Basu fails to teach a doped fiber gain medium. However, Wysocki teaches such a gain medium in a wavelength swept laser. It would have been obvious to one of ordinary skill in the art to modify Pike in view of Basu in as taught by Wysocki.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pike in view of Basu as applied to claims 1, 5, 15, 16, 17, 18, 19, 20, 21 and 22 above, and further in view of Healey US 5,185,814 (herein after known as Healey).

Regarding claim 3, Pike in view of Basu fails to teach a semiconductor amplifier as a gain medium. However, Healy teaches this in column 2 lines 31 – 34 as a possible gain medium. It would have been obvious to one of ordinary skill in the art to modify Pike in view of Basu as taught by Healey.

Regarding claim 4, this limitation is inherent to the modelocking technique.

Claim 6, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pike in view of Basu as applied to claims 1, 5, 15, 16, 17, 18, 19, 20, 21 and 22 above, and further in view of

Art Unit: 2828

Jopson US 5,101,291 (herein after known as Jopson). Pike in view of Basu fails to teach an acusto-optic beam deflector. However, Jopson teaches such a device, see Fig. 1. It would have been obvious to one of ordinary skill in the art to modify Pike in view of Basu as taught by Jopson.

Claims 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pike in view of Basu as applied to claims 1, 5, 15, 16, 17, 18, 19, 20, 21 and 22 above, and further in view of Gavrilovic et al. US 5,917,969 (herein after known as Gavrilovic). Pike in view of Basu fails to teach a fiber nonlinear element. However, Gavrilovic teaches this element in Fig. 1, see column 3 lines 54 – 56. It would have been obvious to one of ordinary skill in the art to modify Pike in view of Basu as taught by Gavrilovic.

Claims 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pike in view of Basu as applied to claims 1, 5, 15, 16, 17, 18, 19, 20, 21 and 22 above, and further in view of Delfyett Jr. US 5,265,107 (herein after known as Delfyett). Pike in view of Basu fails to teach a saturable absorber to cause modelocking and pulsed output. However, Delfyett teaches such a saturable absorber, see Fig. 1 reference numeral 30. It would have been obvious to one of ordinary skill in the art to modify Pike in view of Basu in as taught by Delfyett.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pike in view of Basu as applied to claims 1, 5, 15, 16, 17, 18, 19, 20, 21 and 22 above, and further in view of Negus et al. US 5,079,772 (herein after known as Negus). Pike in view of Basu fails to teach a titanium

Art Unit: 2828

doped sapphire gain medium. However, Negus teaches such a gain medium, see Fig. 1 and the abstract. It would have been obvious to one of ordinary skill in the art be obvious to modify pike in view of Basu as taught by Negus.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pike in view of Basu as applied to claim 1, 5, 15, 16, 17, 18, 19, 20, 21 and 22 above, and further in view of Smith US 5,363,386 (herein after known as Smith). Pike in view of Basu fails to teach a phase modulator for helping the modelocking. However, Smith teaches a phase modulator in Fig. 11. It would have been obvious to one of ordinary skill in the art to modify Pike in view of Basu as taught by Smith.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gioacchino Inzirillo whose telephone number is 703-305-1967. The examiner can normally be reached on M-F 8:30AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on 703-308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7721 for After Final communications.

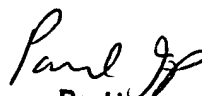
Application/Control Number: 09/473,450

Page 6

Art Unit: 2828

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Gioacchino Inzirillo  
Examiner  
Art Unit 2828  
February 21, 2002

  
Paul Ip  
Primary Examiner